



**RAILROAD STREET TEXACO
RAILROAD ST.& VT ROUTE 2
ST JOHNSBURY, VT
BIENNIAL MONITORING
REPORT - SEPTEMBER 2015**

Prepared for:
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Project No. 08-224125.00
December 2015

Prepared by: **ECS**
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WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

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1.0 INTRODUCTION

This biennial groundwater monitoring report for the Railroad Street Texaco site, SMS #89-0433, was prepared on behalf of Wesco, Inc. The scope of work was outlined in ECS work plan dated 4 September 2015, and approved by Mr. Andrew Fraser of the Vermont Department of Environmental Conservation (VT DEC). The site is depicted in Figures 1 and 2.

The scope of work for this investigation included groundwater sampling for volatile organic compounds (VOCs) from monitoring well MW-1 to determine if the site is eligible for a Sites Management Activity Completed (SMAC) designation.

2.0 SITE HISTORY

The site is located at the northeast corner of Railroad Street and Portland Street near the downtown area of St. Johnsbury, Vermont. There were petroleum releases at the site from leaking underground storage tanks (USTs). The USTs were pulled on 18 September 1989. The USTs included two 4,000 gallon gasoline tanks, a 3,000 gallon gasoline tank, and a 10,000 gallon diesel tank. The removed tanks were replaced with two 10,000 gallon gasoline tanks and a 4,000 gallon diesel tank. An estimated 200 cubic yards of contaminated soils were encountered during the tank removals with elevated photoionization detector (PID) readings up to 160 parts per million (ppm). Contaminated soils remained onsite except for approximately 10 cubic yards of soil was hauled offsite without permission. The soil that was hauled offsite had PID readings of less than 20 ppm.

The initial site investigation occurred following the tank removal. Three monitoring wells were installed. MW-1 and MW-2 were sampled in 1990, 1991, 2010 and 2012. MW-3 was dry and was not sampled. Elevated levels of benzene, toluene, ethylbenzene and xylenes (BTEX), naphthalene and trimethylbenzenes have been previously detected at the site. In July 2012, the only well to exceed Vermont Groundwater Enforcement Standards (VGES) was MW-1. The recommendation in the 2012 biennial report submitted by Aquaterra was to only sample MW-1 the next biennial round since this was the only well with VGES exceedance.

3.0 GROUNDWATER

3.1 GROUNDWATER ELEVATION

On 18 September 2015, depth to groundwater was measured in monitoring well MW-1, which was 13.42 feet below top of well casing (TOC). A static water-table elevation was computed for the monitoring well by subtracting the measured depth to groundwater reading from the top of casing elevation, relative to an arbitrary site datum of 100.00 feet. Water-level measurement and elevation calculation is presented in Table 1. Figure 3 shows the groundwater elevation.

3.2 GROUNDWATER SAMPLING AND ANALYTICAL RESULTS

A groundwater sample was collected from MW-1 for laboratory analysis on 18 September 2015. The other monitoring well at the site, MW-2 has been historically below standards for petroleum contaminant concentrations. MW-3 has historically been dry. Therefore, these wells were removed from the sampling plan as approved by the VTDEC. MW-1 was purged of at least three times its volume using a disposable bailer and drop line. A sample was collected in laboratory-supplied vials pre-preserved with

hydrochloric acid, and shipped on ice under chain of custody procedures for analysis of target petroleum-related VOCs on the Vermont 8021B list via EPA Method 8260B.

Groundwater contaminant concentrations in MW-1 have decreased significantly yet naphthalene remains above VGES. The total BTEX concentration in this well was 1,289 micrograms per liter ($\mu\text{g/L}$) on 18 September 2015, a decrease of 97% from 42,500 $\mu\text{g/L}$ during initial sampling on 2 February 1990 and a decrease of 44% from the previous sampling round on 24 July 2012.

A laboratory-supplied trip blank was submitted to Eurofins Spectrum Analytical with the sample. Results are presented in Table 2. No target analytes were detected in the trip blank. All laboratory control standards including matrix spikes, method blanks, and quality control analyses were within established laboratory acceptance limits. Sampling was performed in accordance with ECS' Standard Operating Procedures (SOPs). Appendix A contains the laboratory analytical report.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Naphthalene exceeded the VGES in groundwater collected from compliance point monitoring well MW-1; and therefore, it is ECS' opinion that the site is not eligible for a Sites Management Activity Completed (SMAC) designation at this time. The other two wells were not sampled at the site because MW-2 has been below laboratory reporting limits for two biennial sampling rounds and MW-3 has been historically dry.

ECS recommends continued biennial groundwater monitoring at the site. In an email dated 24 September 2015, Mr. Andrew Fraser from the VT DEC requested that MW-2 be sampled during the next biennial monitoring round. This well is currently paved over and will have to be uncovered and its condition verified prior to sampling. If no VGES are exceeded in the next biennial monitoring event then the site should be eligible for a SMAC designation.

5.0 LIMITATIONS

Limitations

This report was prepared exclusively for Wesco, Inc. and was undertaken to assess specific environmental conditions previously identified on the subject property as presented in reports prepared by Aquaterra. Analytical assessment and testing locations were specified by the VTDEC. No other warranty, express or implied, is provided with respect to any location not assessed, tested or analyzed. Absolute assurance that any and all possible contamination at the site has been identified cannot be provided.

The report conclusions are based, in part, on information provided by the client, the client's agents, or third parties, including state or local officials. ECS assumes no responsibility for the accuracy and completeness of this information.

Where visual observations are included in the report, they represent conditions at the time of this testing, and may not be indicative of past or future conditions. Any additional information that becomes available concerning the project site should be provided to ECS so that our conclusions and recommendations can be reviewed and modified, if necessary.

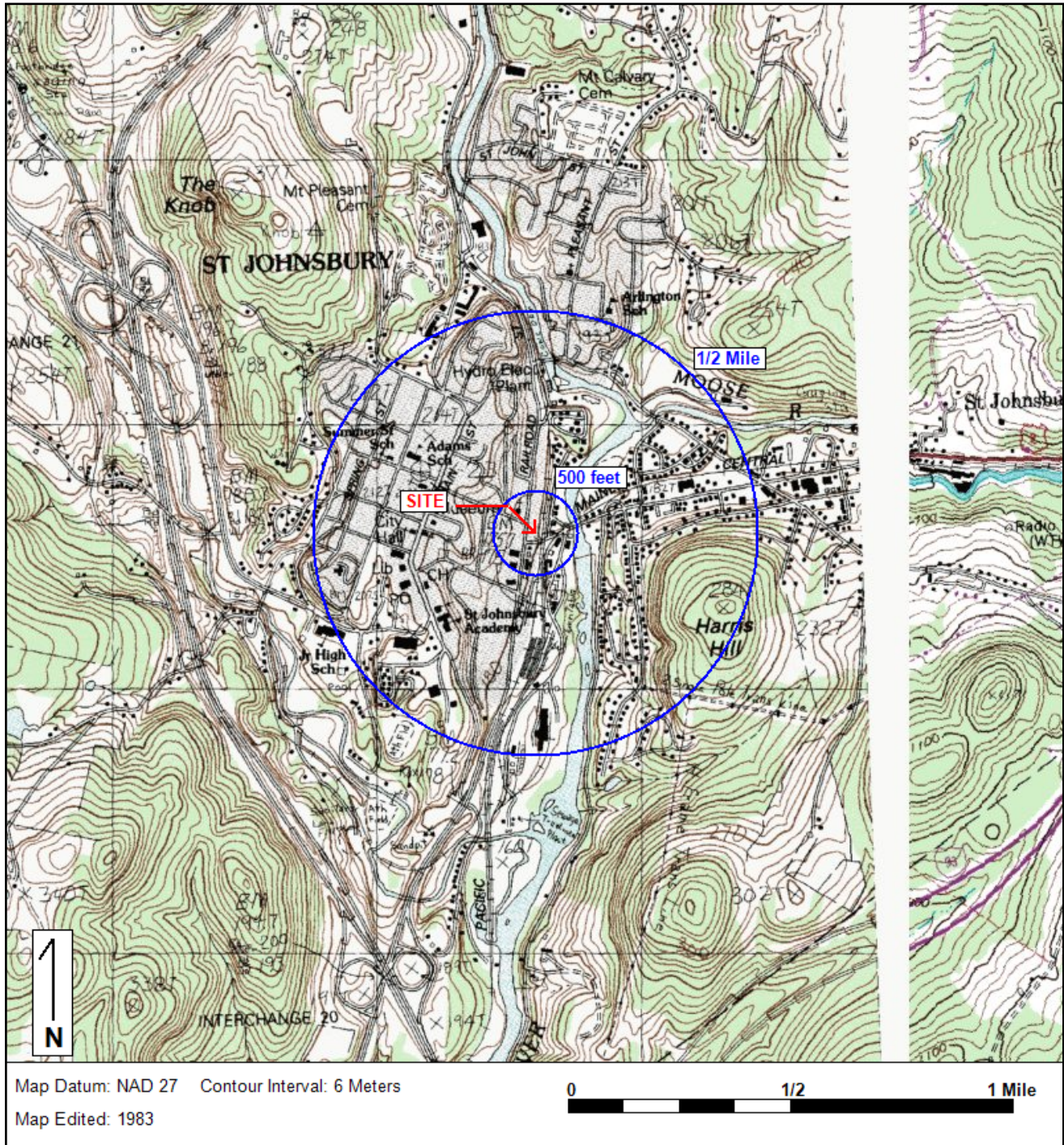
FIGURES



Railroad Street Texaco
Railroad and Pleasant Street
St Johnsbury, VT

Environmental Compliance Services, Inc.
1 Elm Street, Suite 3
Waterbury, VT 05676
Phone 802-241-4131 Fax 802-244-6894
www.ecsconsult.com

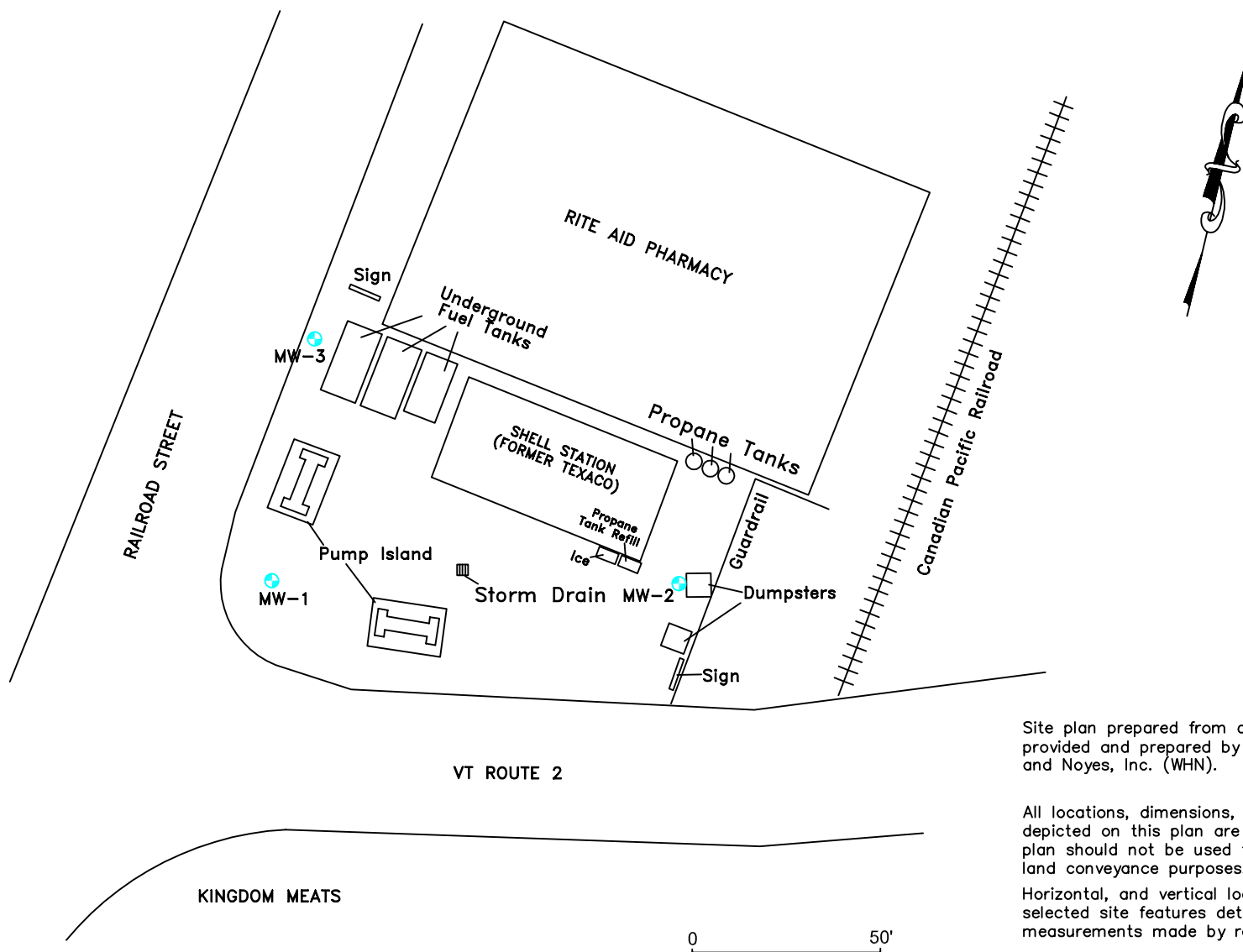
Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Saint Johnsbury, VT

Lat/Lon: 44 25' 10.48" NORTH, 72 54.2" WEST - UTM Coordinates: 18 737624.6 EAST / 4922810.4 NORTH

Generated By: Carol Farrington



Site plan prepared from a site plan map provided and prepared by Wagner, Heindel, and Noyes, Inc. (WHN).

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Horizontal, and vertical locations of wells, and selected site features determined through measurements made by representatives of WHN.



1 Elm Street, Suite 3 • Waterbury, VT 05676
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LEGEND

PROJECT:

Railroad St. Texaco

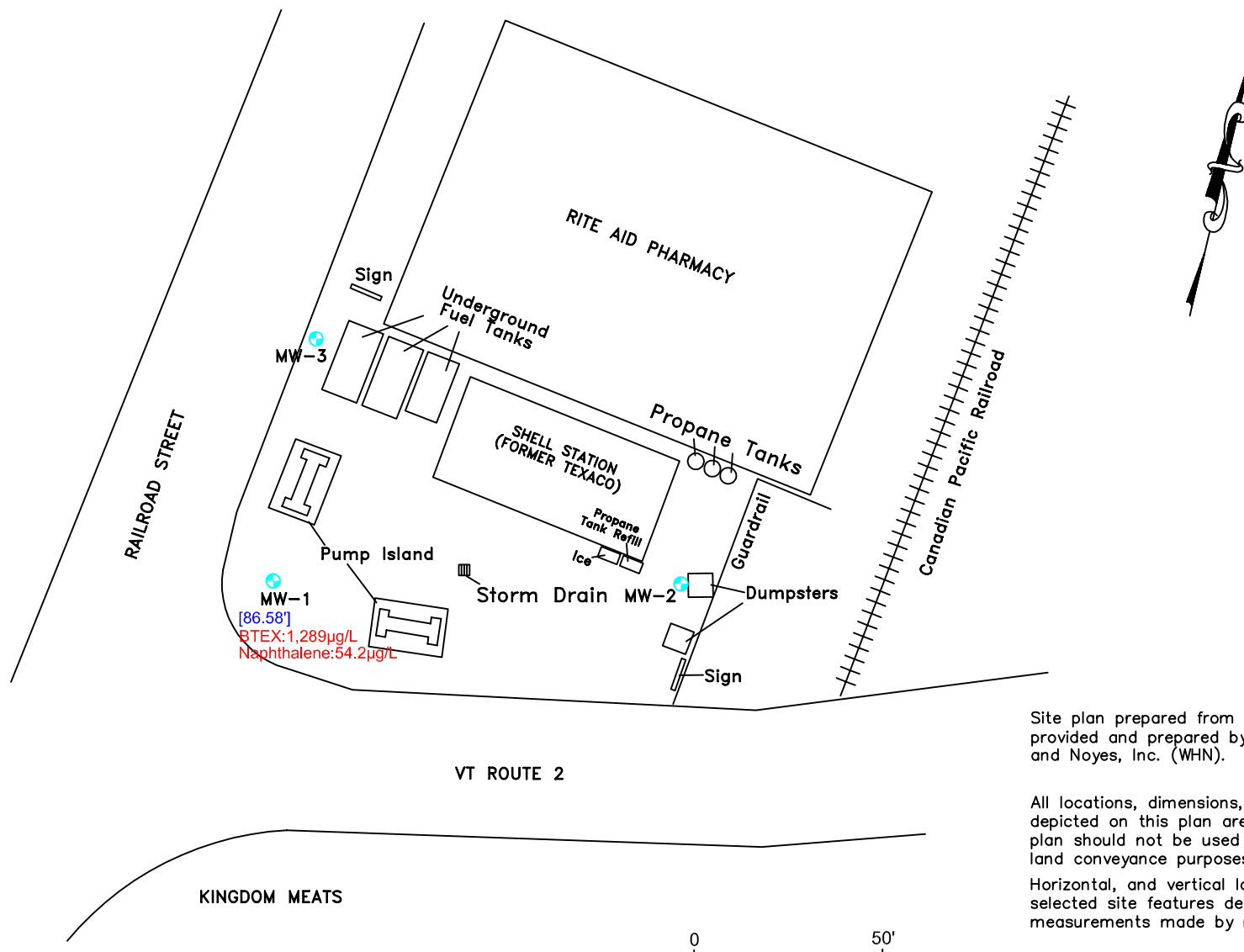
Railroad St. and VT Route 2
St. Johnsbury, VT

TITLE:

Site Plan

COMPUTER CADFILE: Box/224125/CADD

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
AC	WHN	KM	KM
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
Shown	11/03/15	08-224125.00	2



Site plan prepared from a site plan map provided and prepared by Wagner, Heindel, and Noyes, Inc. (WHN).

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Horizontal, and vertical locations of wells, and selected site features determined through measurements made by representatives of WHN.



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LEGEND

[86.58'] Groundwater Elevation
BTEX Benzene, Toluene, Ethylbenzene and Total Xylenes
µg/L Micrograms per Liter

PROJECT:

Railroad St. Texaco

Railroad St. and VT Route 2
St. Johnsbury, VT

TITLE:

Groundwater Elevation and Contaminant Concentration Map
Sample Date: 9/18/15

COMPUTER CADFILE: Box/224125/CADD

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
AC	WHN	KM	KM
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
Shown	11/03/15	08-224125.00	3

TABLES

TABLE 1
GROUND WATER ELEVATION CALCULATIONS

Railroad Street Texaco
St. Johnsbury, VT

Monitoring Date: 18 September 2015

Well I. D.	Top of Casing Elevation *	Depth to Water (feet, TOC)	Ground Water Elevation
MW-1	100.00	13.42	86.58

Notes:

*All values reported in feet relative to arbitrary datum.

**TABLE 2.
VOC CONCENTRATIONS**

Railroad Street Texaco
St. Johnsbury, VT

Sample Location	VGES	MW-1					MW-2			
Sample Date		2-Feb-90	3-May-91	10-Aug-10	24-Jul-12	18-Sep-15	2-Feb-90	3-May-91	10-Aug-10	24-Jul-12
VOCs (µg/L)										
Benzene	5	3,200	1,120	BRL<4.4	BRL<20	BRL<10	17.2	4.5	BRL<1.0	BRL<1.0
Toluene	1,000	12,200	4,200	100	96	11.1	10.2	1.6	BRL<1.0	BRL<1.0
Ethylbenzene	700	3,100	460	340	400	181	44	BRL<1.0	BRL<1.0	BRL<1.0
Total Xylene	10,000	24,000	3,500	1,200	1,800	1097	187	19	BRL<1.0	BRL<1.0
Total BTEX	--	42,500	9,280	1,640	2,296	1,289	258	25	--	--
Methyl-tert Butyl Ether	40	22,000	25,000	BRL<4.4	BRL<20	BRL<10	BRL<1.0	BRL<1.0	BRL<1.0	BRL<1.0
Naphthalene	20	NA	NA	98	190	54.2	NA	NA	BRL<1.0	BRL<1.0
Trimethylbenzenes	350	NA	NA	338	580	259.5	NA	NA	BRL<1.0	BRL<1.0
Total VOCs	--	64,500	34,280	2,076	3,066	1,603	258	25	--	--

Notes:

Results given in micrograms per liter.

BRL - Below Reporting Limit

NA- Not Analyzed

VGES - Vermont Groundwater Enforcement Standards, shaded area denotes exceedence of VGES

All samples collected by ECS and analyzed by Eurofin-Spectrum Analytical, Inc.

APPENDIX A

LABORATORY REPORT

- ☒ Final Report
☐ Re-Issued Report
☐ Revised Report

Report Date:
02-Oct-15 12:20

Laboratory Report

Environmental Compliance Services
1 Elm St. Suite 3
Waterbury, VT 05676
Attn: Katrina Mattice

Project: Railroad St Texaco - Saint Johnsbury, VT
Project #: 08-224152

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SC12692-01	Trip Blank	Deionized Water	18-Sep-15 00:00	22-Sep-15 11:15
SC12692-02	MW-1	Ground Water	18-Sep-15 10:50	22-Sep-15 11:15

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00098
USDA # S-51435



Authorized by:



Nicole Leja
Laboratory Director

Eurofins Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.

Please note that this report contains 9 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

Eurofins Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our Quality web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (PA-68-04426).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 5.7 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 8260C

Calibration:

1509006

Analyte quantified by quadratic equation type calibration.

Naphthalene

This affected the following samples:

S508166-ICV1

1509020

Analyte quantified by quadratic equation type calibration.

1,2,4-Trimethylbenzene

1,3,5-Trimethylbenzene

Naphthalene

This affected the following samples:

1518163-BLK1

1518163-BS1

1518163-BSD1

S508439-ICV1

S508636-CCV1

Trip Blank

S508439-ICV1

Analyte percent recovery is outside individual acceptance criteria (80-120).

Naphthalene (126%)

This affected the following samples:

1518163-BLK1

1518163-BS1

1518163-BSD1

S508636-CCV1

Trip Blank

Samples:

SC12692-02

MW-I

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

Sample Acceptance Check Form

Client: Environmental Compliance Services - Waterbury, VT
Project: Railroad St Texaco - Saint Johnsbury, VT / 08-224152
Work Order: SC12692
Sample(s) received on: 9/22/2015

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were custody seals intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples received at a temperature of $\leq 6^{\circ}\text{C}$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples cooled on ice upon transfer to laboratory representative?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were sample containers received intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples accompanied by a Chain of Custody document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did sample container labels agree with Chain of Custody document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples received within method-specific holding times?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Summary of Hits

Lab ID: SC12692-02

Client ID: MW-1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
1,2,4-Trimethylbenzene	200	D	10.0	µg/l	SW846 8260C
1,3,5-Trimethylbenzene	59.5	D	10.0	µg/l	SW846 8260C
Ethylbenzene	181	D	10.0	µg/l	SW846 8260C
m,p-Xylene	838	D	20.0	µg/l	SW846 8260C
Naphthalene	54.2	D	10.0	µg/l	SW846 8260C
o-Xylene	259	D	10.0	µg/l	SW846 8260C
Toluene	11.1	D	10.0	µg/l	SW846 8260C

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification

Trip Blank

SC12692-01

Client Project #

08-224152

Matrix

Deionized Water

Collection Date/Time

18-Sep-15 00:00

Received

22-Sep-15

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
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Volatile Organic Compounds

Volatile Organic Compounds by GC/MS

Prepared by method SW846 5030 Water MS

71-43-2	Benzene	< 1.0		µg/l	1.0	0.2	1	SW846 8260C	24-Sep-15	24-Sep-15	GMA	1518163	X
106-93-4	1,2-Dibromoethane (EDB)	< 0.5		µg/l	0.5	0.3	1	"	"	"	"	"	X
107-06-2	1,2-Dichloroethane	< 1.0		µg/l	1.0	0.2	1	"	"	"	"	"	X
100-41-4	Ethylbenzene	< 1.0		µg/l	1.0	0.2	1	"	"	"	"	"	X
1634-04-4	Methyl tert-butyl ether	< 1.0		µg/l	1.0	0.2	1	"	"	"	"	"	X
91-20-3	Naphthalene	< 1.0		µg/l	1.0	0.4	1	"	"	"	"	"	X
108-88-3	Toluene	< 1.0		µg/l	1.0	0.3	1	"	"	"	"	"	X
95-63-6	1,2,4-Trimethylbenzene	< 1.0		µg/l	1.0	0.4	1	"	"	"	"	"	X
108-67-8	1,3,5-Trimethylbenzene	< 1.0		µg/l	1.0	0.9	1	"	"	"	"	"	X
179601-23-1	m,p-Xylene	< 2.0		µg/l	2.0	0.4	1	"	"	"	"	"	X
95-47-6	o-Xylene	< 1.0		µg/l	1.0	0.5	1	"	"	"	"	"	X

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	82			70-130 %			"	"	"	"	"	
2037-26-5	Toluene-d8	102			70-130 %			"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	109			70-130 %			"	"	"	"	"	
1868-53-7	Dibromofluoromethane	106			70-130 %			"	"	"	"	"	

This laboratory report is not valid without an authorized signature on the cover page.

Sample Identification

MW-1

SC12692-02

Client Project #

08-224152

Matrix

Ground Water

Collection Date/Time

18-Sep-15 10:50

Received

22-Sep-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Volatile Organic Compounds by GC/MS			GS1										
Prepared by method SW846 5030 Water MS													
71-43-2	Benzene	< 10.0	D	µg/l	10.0	1.7	10	SW846 8260C	25-Sep-15	25-Sep-15	NAA	1518240	X
106-93-4	1,2-Dibromoethane (EDB)	< 5.0	D	µg/l	5.0	2.6	10	"	"	"	"	"	X
107-06-2	1,2-Dichloroethane	< 10.0	D	µg/l	10.0	1.6	10	"	"	"	"	"	X
100-41-4	Ethylbenzene	181	D	µg/l	10.0	1.7	10	"	"	"	"	"	X
1634-04-4	Methyl tert-butyl ether	< 10.0	D	µg/l	10.0	1.7	10	"	"	"	"	"	X
91-20-3	Naphthalene	54.2	D	µg/l	10.0	4.0	10	"	"	"	"	"	X
108-88-3	Toluene	11.1	D	µg/l	10.0	3.3	10	"	"	"	"	"	X
95-63-6	1,2,4-Trimethylbenzene	200	D	µg/l	10.0	4.0	10	"	"	"	"	"	X
108-67-8	1,3,5-Trimethylbenzene	59.5	D	µg/l	10.0	8.9	10	"	"	"	"	"	X
179601-23-1	m,p-Xylene	838	D	µg/l	20.0	3.8	10	"	"	"	"	"	X
95-47-6	o-Xylene	259	D	µg/l	10.0	4.7	10	"	"	"	"	"	X

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	101			70-130 %		"	"	"	"	"	"
2037-26-5	Toluene-d8	100			70-130 %		"	"	"	"	"	"
17060-07-0	1,2-Dichloroethane-d4	89			70-130 %		"	"	"	"	"	"
1868-53-7	Dibromofluoromethane	101			70-130 %		"	"	"	"	"	"

This laboratory report is not valid without an authorized signature on the cover page.

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1518163 - SW846 5030 Water MS										
<u>Blank (1518163-BLK1)</u>					<u>Prepared & Analyzed: 24-Sep-15</u>					
Benzene	< 1.0		µg/l	1.0						
1,2-Dibromoethane (EDB)	< 0.5		µg/l	0.5						
1,2-Dichloroethane	< 1.0		µg/l	1.0						
Ethylbenzene	< 1.0		µg/l	1.0						
Methyl tert-butyl ether	< 1.0		µg/l	1.0						
Naphthalene	< 1.0		µg/l	1.0						
Toluene	< 1.0		µg/l	1.0						
1,2,4-Trimethylbenzene	< 1.0		µg/l	1.0						
1,3,5-Trimethylbenzene	< 1.0		µg/l	1.0						
m,p-Xylene	< 2.0		µg/l	2.0						
o-Xylene	< 1.0		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	42.3		µg/l		50.0		85	70-130		
Surrogate: Toluene-d8	50.8		µg/l		50.0		102	70-130		
Surrogate: 1,2-Dichloroethane-d4	53.4		µg/l		50.0		107	70-130		
Surrogate: Dibromofluoromethane	52.8		µg/l		50.0		106	70-130		
<u>LCS (1518163-BS1)</u>					<u>Prepared & Analyzed: 24-Sep-15</u>					
Benzene	20.3		µg/l		20.0		101	70-130		
1,2-Dibromoethane (EDB)	21.1		µg/l		20.0		106	70-130		
1,2-Dichloroethane	19.4		µg/l		20.0		97	70-130		
Ethylbenzene	20.1		µg/l		20.0		100	70-130		
Methyl tert-butyl ether	19.0		µg/l		20.0		95	70-130		
Naphthalene	20.8		µg/l		20.0		104	70-130		
Toluene	20.2		µg/l		20.0		101	70-130		
1,2,4-Trimethylbenzene	16.9		µg/l		20.0		84	70-130		
1,3,5-Trimethylbenzene	17.2		µg/l		20.0		86	70-130		
m,p-Xylene	21.0		µg/l		20.0		105	70-130		
o-Xylene	18.7		µg/l		20.0		94	70-130		
Surrogate: 4-Bromofluorobenzene	53.0		µg/l		50.0		106	70-130		
Surrogate: Toluene-d8	52.7		µg/l		50.0		105	70-130		
Surrogate: 1,2-Dichloroethane-d4	49.7		µg/l		50.0		99	70-130		
Surrogate: Dibromofluoromethane	51.7		µg/l		50.0		103	70-130		
<u>LCS Dup (1518163-BSD1)</u>					<u>Prepared & Analyzed: 24-Sep-15</u>					
Benzene	19.4		µg/l		20.0		97	70-130	5	20
1,2-Dibromoethane (EDB)	21.3		µg/l		20.0		106	70-130	0.7	20
1,2-Dichloroethane	19.2		µg/l		20.0		96	70-130	1	20
Ethylbenzene	18.2		µg/l		20.0		91	70-130	10	20
Methyl tert-butyl ether	19.2		µg/l		20.0		96	70-130	1	20
Naphthalene	20.5		µg/l		20.0		102	70-130	1	20
Toluene	19.1		µg/l		20.0		95	70-130	6	20
1,2,4-Trimethylbenzene	15.6		µg/l		20.0		78	70-130	8	20
1,3,5-Trimethylbenzene	15.9		µg/l		20.0		80	70-130	8	20
m,p-Xylene	18.8		µg/l		20.0		94	70-130	11	20
o-Xylene	17.4		µg/l		20.0		87	70-130	7	20
Surrogate: 4-Bromofluorobenzene	52.2		µg/l		50.0		104	70-130		
Surrogate: Toluene-d8	53.4		µg/l		50.0		107	70-130		
Surrogate: 1,2-Dichloroethane-d4	49.9		µg/l		50.0		100	70-130		
Surrogate: Dibromofluoromethane	51.7		µg/l		50.0		103	70-130		
Batch 1518240 - SW846 5030 Water MS										
<u>Blank (1518240-BLK1)</u>					<u>Prepared & Analyzed: 25-Sep-15</u>					
Benzene	< 1.0		µg/l	1.0						

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1518240 - SW846 5030 Water MS										
<u>Blank (1518240-BLK1)</u>					<u>Prepared & Analyzed: 25-Sep-15</u>					
1,2-Dibromoethane (EDB)	< 0.5		µg/l	0.5						
1,2-Dichloroethane	< 1.0		µg/l	1.0						
Ethylbenzene	< 1.0		µg/l	1.0						
Methyl tert-butyl ether	< 1.0		µg/l	1.0						
Naphthalene	< 1.0		µg/l	1.0						
Toluene	< 1.0		µg/l	1.0						
1,2,4-Trimethylbenzene	< 1.0		µg/l	1.0						
1,3,5-Trimethylbenzene	< 1.0		µg/l	1.0						
m,p-Xylene	< 2.0		µg/l	2.0						
o-Xylene	< 1.0		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	48.1		µg/l		50.0		96	70-130		
Surrogate: Toluene-d8	50.0		µg/l		50.0		100	70-130		
Surrogate: 1,2-Dichloroethane-d4	45.2		µg/l		50.0		90	70-130		
Surrogate: Dibromofluoromethane	50.6		µg/l		50.0		101	70-130		
<u>LCS (1518240-BS1)</u>					<u>Prepared & Analyzed: 25-Sep-15</u>					
Benzene	21.6		µg/l		20.0		108	70-130		
1,2-Dibromoethane (EDB)	20.6		µg/l		20.0		103	70-130		
1,2-Dichloroethane	17.7		µg/l		20.0		89	70-130		
Ethylbenzene	22.0		µg/l		20.0		110	70-130		
Methyl tert-butyl ether	17.9		µg/l		20.0		90	70-130		
Naphthalene	18.2		µg/l		20.0		91	70-130		
Toluene	21.8		µg/l		20.0		109	70-130		
1,2,4-Trimethylbenzene	22.6		µg/l		20.0		113	70-130		
1,3,5-Trimethylbenzene	22.5		µg/l		20.0		112	70-130		
m,p-Xylene	22.8		µg/l		20.0		114	70-130		
o-Xylene	23.2		µg/l		20.0		116	70-130		
Surrogate: 4-Bromofluorobenzene	51.9		µg/l		50.0		104	70-130		
Surrogate: Toluene-d8	49.7		µg/l		50.0		99	70-130		
Surrogate: 1,2-Dichloroethane-d4	43.2		µg/l		50.0		86	70-130		
Surrogate: Dibromofluoromethane	50.9		µg/l		50.0		102	70-130		
<u>LCS Dup (1518240-BSD1)</u>					<u>Prepared & Analyzed: 25-Sep-15</u>					
Benzene	20.5		µg/l		20.0		102	70-130	5	20
1,2-Dibromoethane (EDB)	19.9		µg/l		20.0		100	70-130	3	20
1,2-Dichloroethane	17.1		µg/l		20.0		85	70-130	4	20
Ethylbenzene	20.0		µg/l		20.0		100	70-130	9	20
Methyl tert-butyl ether	17.4		µg/l		20.0		87	70-130	3	20
Naphthalene	16.1		µg/l		20.0		80	70-130	12	20
Toluene	20.1		µg/l		20.0		100	70-130	8	20
1,2,4-Trimethylbenzene	20.1		µg/l		20.0		100	70-130	12	20
1,3,5-Trimethylbenzene	20.1		µg/l		20.0		100	70-130	11	20
m,p-Xylene	20.5		µg/l		20.0		102	70-130	11	20
o-Xylene	20.9		µg/l		20.0		104	70-130	11	20
Surrogate: 4-Bromofluorobenzene	51.2		µg/l		50.0		102	70-130		
Surrogate: Toluene-d8	50.7		µg/l		50.0		101	70-130		
Surrogate: 1,2-Dichloroethane-d4	44.0		µg/l		50.0		88	70-130		
Surrogate: Dibromofluoromethane	51.8		µg/l		50.0		104	70-130		

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Notes and Definitions

D	Data reported from a dilution
GS1	Sample dilution required for high concentration of target analytes to be within the instrument calibration range.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

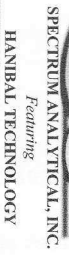
Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Rebecca Merz



Page 1 of 1

Special Handling:

☒ Standard TAT - 7 to 10 business days

☐ Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed

Telephone #: _____
Project Mgr: _____

Ielma St Suite 3
Waltham MA 05676
862-291-4131
Kathrina Plattner

P.O.No.: 08-224125 Quote/RQN: Special

Site Name: David McQuade PM

Location: Saint Johnsbury State: VT

Sample(s): Black Forest

State:

$$I_1 = I_2 =$$

List Preservative Code below:

Z						
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QA/QC Reporting Notes:
* additional charges may apply

* additional charges may apply

O=Oil **SO**=Soil **SL**=Sludge **A**=Indoor/Ambient Air **SG**=Soil Gas

X1 = Deionized H₂O X2 = _____ X3 = _____

C=C Composite

Lab ID:	Sample ID:

Date: _____ Time: _____

T

M

Use of VOA Vials

of Amber Glass

of Clear Glass

of Plastic

8021 BVT
0000

Check if chlorinated

☐ MA DEP MCP CAM Report? ☐ Yes ☐ No
☐ CT DPH MCP Report? ☐ Yes ☐ No
☒ Standard ☐ No QC
 ☐ DQA*
 ☐ ASP A* ☐ ASP B*
 ☐ NJ Reduced* ☐ NJ Full*
 ☐ Tier II* ☐ Tier IV*
☐ Other: _____
 State-specific reporting standards: _____

State-specific reporting standards:

Received by:

Date:

Time:

Temp. °C

□ EDD format:

 E-mail to:

Классификация по классам, цвет

M. H. L.
C. B. L. County

Q Both answers
UP

9/15/15	1710
9/21/15	1700

Observed	507
Correction Factor	0

☒ E-mail to: _____

Math 12 ② 25 lens v1, lens

18

AD5

~~9/21/18~~

11-5-15

Corrected
67

Condition upon receipt

Custody Seals: ☒ Present ☒ Intact ☐ Broken

11 Almgren Drive • Agawam, MA 01001 • 413-789-9018 • FAX 413-789-4076 • www.spectrum-analytical.com

UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
3. **GETTING YOUR SHIPMENT TO UPS**
Customers with a Daily Pickup
Your driver will pickup your shipment(s) as usual.
Customers without a Daily Pickup
Take your package to any location of The UPS Store®, UPS Access Point™ location, UPS Drop Box, UPS Customer Center, UPS Alliances (Office Depot® or Staples®) or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
Hand the package to any UPS driver in your area.

FOLD HERE

UPS Access Point™
THE UPS STORE
112 S MAIN ST
STOWE, VT 05672

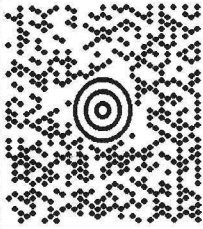
20 LBS

1 OF 1

AMY BETH CONNELL
8024344500
ECS WATERBURY
1 ELM STREET
WATERBURY VT 05676

SHIP TO:

LAB
413 789 9018
SPECTRUM ANALYTICAL
11 ALMGREN DRIVE
AGAWAM MA 01001-3831



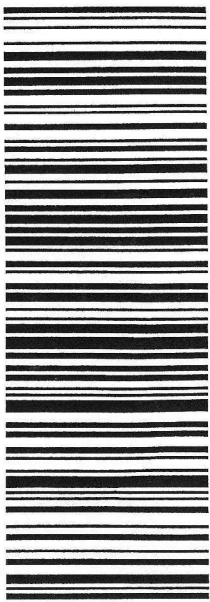
MA 011 9-06



UPS NEXT DAY AIR

1

TRACKING #: 1Z F31 7E5 01 9231 9463



BILLING: F/C BILL RECEIVER

Location Reference: 0008
Project Number: samples

CS 17.5.41. WNTNV50 66.0A 07/2015

